State & Federal Energy Storage Technology Advancement Partnership (ESTAP)

Todd Olinsky-Paul
Clean Energy States Alliance

The Renaissance Hotel
Washington, D.C.
September 2012
Thank You:

Dr. Imre Gyuk
U.S. Department of Energy,
Office of Electricity Delivery and
Energy Reliability

Dan Borneo
Sandia National Laboratories
ESTAP is a project of CESA

Clean Energy States Alliance (CESA) is a non-profit organization providing a forum for states to work together to implement effective clean energy policies & programs:

– Information Exchange
– Partnership Development
– Joint Projects (National RPS Collaborative, Interstate Turbine Advisory Council)
– Clean Energy Program Design & Evaluations
– Analysis and Reports

CESA is supported by a coalition of states and public utilities representing the leading U.S. public clean energy programs.
ESTAP* Overview

**Purpose:** Create new DOE-state energy storage partnerships and advance energy storage, with technical assistance from Sandia National Laboratories

**Focus:** Distributed electrical energy storage technologies

**Outcome:** Near-term and ongoing project deployments across the U.S. with co-funding from states, project partners, and DOE

* (Energy Storage Technology Advancement Partnership)
Why work with states?

Surveys Indicate Strong State Interest in Storage
- 75% of states responding “very interested” in collaborating on energy storage technology projects with DOE, especially commercial & demonstration projects.

States Have Resources
- From 1998-2009, state clean energy funds incentivized 70,000 projects – 3 GW of installed capacity – with $2.7b
- With Renewable Energy Public Benefit Funds alone (18 states & DC), states will spend $7.8b by 2017

States Are Important Partners
- Many state partners also have jurisdiction over utilities, resource planning, transmission and project siting, etc.
- State-stakeholder partnerships can ignite project ideas and creative funding arrangements
29 states + Washington DC and 2 territories have Renewable Portfolio Standards
(8 states and 2 territories have renewable portfolio goals)

- **WA**: 15% x 2020*
- **MT**: 15% x 2015
- **MN**: 25% x 2025
  - (Xcel: 30% x 2020)
- **ND**: 10% x 2015
- **SD**: 10% x 2015
- **MI**: 10% & 1,100 MW x 2015*
- **WI**: Varies by utility; ~10% x 2015 statewide
- **NY**: 29% x 2015
- **OH**: 12.5% x 2024
- **VA**: 15% x 2025*
- **WV**: 25% x 2025†
- **CA**: 33% x 2020
- **UT**: 20% by 2025*
- **CO**: 30% by 2020 (TOWS)
- **IA**: 105 MW
- **IL**: 25% x 2025
- **KS**: 20% x 2020
- **MO**: 15% x 2021
- **NC**: 12.5% x 2021 (TOWS)
- **OK**: 15% x 2015
- **NM**: 20% x 2020 (TOWS)
- **TX**: 5,880 MW x 2015
- **NC**: 12.5% x 2021 (TOWS)
- **HI**: 40% x 2030
- **CT**: 27% x 2020
- **MA**: 22.1% x 2020
  - New RE: 15% x 2020 (+1% annually thereafter)
- **NH**: 24.8% x 2025
- **VT**: (1) RE meets any increase in retail sales x 2012;
  - (2) 20% RE & CHP x 2017
- **NJ**: 20.38% RE x 2021 + 4.1% solar x 2028
- **PA**: ~18% x 2021†
- **MD**: 20% x 2022
- **DE**: 25% x 2026*
- **DC**: 20% x 2020
- **ME**: 30% x 2000
  - New RE: 10% x 2017
- **RI**: 16% x 2020

*Minimum solar or customer-sited requirement
†Includes non-renewable alternative resources
*Extra credit for solar or customer-sited renewables

[www.dsireusa.org](http://www.dsireusa.org) / September 2012

States with Renewable Portfolio Standards

[Clean Energy States Alliance](http://www.cleanenergystatesalliance.org)
[Sandia National Laboratories](https://www.sandia.gov)
[U.S. Department of Energy](https://www.energy.gov)
18 states, + Washington DC & Puerto Rico have public benefits funds ($7.8 billion by 2017).

States with Public Benefits Funds for Renewables

- **MT**: $1.2M in 2011, $18.5M from 1999-2017*
- **MN**: $19.5M in 2011, $339M from 1999-2017*
- **WI**: $10M in 2012, $97.7M from 2001-2017*
- **IL**: $5.5M in FY2011, $96.8M from 1998-2015
- **MI**: $5M in FY2011, $47.7M from 2001-2017*
- **OH**: None in 2011, $35.4M from 2001-2010
- **DE**: $3.5M in FY2011, $51.3M from 1999-2017*
- **CA**: $411M in 2011, $4,850M from 1998-2016
- **OR**: $14.2M in 2012, $198.3M from 2001-2017**
- **CA**: $411M in 2011, $4,850M from 1998-2016
- **HI**: $4.8M in PY 2012, $25.9M from 2009-2017*
- **PR**: $20M in FY2012, $290M from 2011-2020
- **ME**: $434,000 in FY2011, $4.6M from 2002-2011
- **VT**: $4.7 in FY2011, $32M from 2004-2013
- **MA**: $23M in FY2011, $510M from 1998-2017*
- **RI**: $2.3M in 2011, $39.2M from 1997-2017
- **CT**: $29M in FY2011, $433M from 2000-2017*
- **NJ**: $22M in 2011, $494M from 2001-2012
- **NY**: $15.5M in FY2011, $176.1M from 1999-2016
- **PA**: $950,000 in 2011, $65.3M from 1999-2012

* Fund does not have a specified expiration date
** The Oregon Energy Trust is scheduled to expire in 2025

(Note: Slides 2-12 explain the methodology for calculating funding estimates.)
CESA Member Renewable Energy Funds

www.dsireusa.org/CESA  September 2012 (estimated collections)

* Fund does not have a specified expiration date
** The Oregon Energy Trust is scheduled to expire in 2025
*** NY also will fund $429 M for the CST program/RPS surcharge from 2010-2015 and also about $191M for Emerging Technologies over the 13-year SBC program.

CESA:
16 Member Funds
3 Affiliate Members

ESTAP:
>500 members

CleanEnergy
States Alliance
Sandia National Laboratories
ESTAP Key Activities

• Disseminate information to stakeholders
  • ESTAP listserv >500 members
  • Webinars, conferences, information updates, surveys

• Facilitate public/private partnerships at state level to support energy storage demonstration project development
  • Match bench-tested energy storage technologies with state hosts for demonstration project deployment
  • DOE/Sandia provide $ for generic engineering, monitoring and assessment
  • Cost share $ from states, utilities, foundations, other stakeholders
Goal: To get from Here...
...To Here!

(PUC = Public Utility Commission)
Contact Information

Project website:
www.cleanenergystates.org/projects/energy-storage-technology-advancement-partnership/

CESA Project Director:
Todd Olinsky-Paul (Todd@cleanegroup.org)

Sandia Project Director:
Dan Borneo (drborne@sandia.gov)